



Case report

Suicidal strangulation by plastic lock tie

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ABSTRACT

A case of self-strangulation with a rare kind of ligature material is reported and discussed. The merit of the case lies in the 'self-retaining' nature of the ligature material deployed. The case subject was a 50 year old man found dead in an open field with a unique ligature material of 'plastic lock tie' in-situ at neck. Forensic autopsy revealed ligature mark above the level of thyroid cartilage, evidence of bleeding through mouth and nostrils along with generalized features of congestion. Toxicological analysis of blood and viscera detected organophosphorus poison in stomach contents. Cause of death was opined as mechanical asphyxia due to compression of neck by self-strangulation. The importance of a scrupulous forensic autopsy supplemented by ancillary investigations and circumstantial evidences are highlighted. The relevance of the visit of autopsy surgeon to the scene of occurrence is emphasized.

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1. Introduction

Self-strangulation is relatively uncommon with few cases being reported in forensic literature.^{1,2} Homicidal deaths shall be ruled out in such circumstances. A detailed examination of death scene and the ligature material, its configuration, number of wrappings around the neck deserves a special mention. In self-strangulation, the ligature material may consist of wide variety of objects ranging from electrical cords, neckties and ropes to telephone cords, towels and stockings. The self-retaining ligature material of plastic lock tie, deployed in the present case is remarkable for its uniqueness and hence deserves a special mention.

2. Case report

An adult man, aged 50 years was reported to have found dead, in a prone position in an open field. The deceased subject was brought for post mortem examination to the department of forensic medicine, JSS Medical College, Mysore, India.

On external examination, the clothing worn was intact and the pocket contained a suicide note mentioning financial conflicts as

the reason to commit suicide. A black coloured plastic 'lock tie' was present completely encircling the neck. Blood stains were present at the mouth and nostrils. (Fig. 1) Signs of asphyxia were remarkable with facial congestion and sub-conjunctival haemorrhage. The ligature mark was present in the form of a patterned groove, measuring 38 cm in length, which completely encircled the neck with a maximum width of 1 cm, placed above the level of thyroid cartilage, in front and below the external occipital protuberance behind. The surface was pale with vertical parallel striations. (Fig. 2) The ligature material was a black coloured, self-retaining plastic lock tie. (Fig. 3) with parallel vertical grooves on the inner surface which was in contact with the neck. The outer surface was smooth. The lock tie had an inbuilt locking mechanism. It measured 43 cm in length and a noose had been made with a circumference of 35 cm to completely encircle the neck, while the circumference of the neck was 38 cm. On a bloodless-layered dissection of neck, the strap muscles were found to be contused. Thyroid cartilage, hyoid bone, jugular and carotid vessels were intact. Histopathological examination of the skin of the ligature mark showed 'focal thinning of epidermis, collagen degeneration of sub epithelial region and congested vessels with extravasation of erythrocytes' which indicated antemortem compression of the neck structures.³ There were no peri-ligature injuries or any other external injuries on the deceased.

On internal examination, all organs were congested. The stomach contained 300 ml of dark brown fluid with a kerosene-like

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Fig. 1. Blood stains over mouth and nostrils.

odour. Chemical analysis of the viscera revealed the presence of organophosphorus compound in stomach contents but negative in other organs and blood sample.

3. Discussion

At the initial encounter, a case of self-strangulation may be easily mistaken for homicide as self compression of the neck with



Fig. 2. Ligature mark with vertical striations.



Fig. 3. In-situ ligature material at the neck.

constricting force being other than body weight is usually considered unlikely. But the fact that a mere tension of 2 kg would be sufficient enough to block the jugular veins, while the force required to occlude the trachea is 15 kg, disproves the myth of 'impossible' self-strangulation.⁴

In self-strangulation, the ligature material may consist of wide variety of objects ranging from electrical cords, neckties, ropes, telephone cords, towels and stockings. In a study on unusual methods of suicide, three out of ten cases were self-strangulation.⁵ Facial congestion, scleral haemorrhage and tonsillar bleeding are the typical findings of ligature strangulation unlike in hanging where an incomplete occlusion of the vasculature occurs. In the former, blood continues to enter the head via the vertebral arteries resulting in increased vascular pressure, congestion and rupture of vessels.²

In a review made on unique ligature material used for self-strangulation, a tourniquet with a walking stick, a panty hose, a scarf, a dressing gown cord, a telephone wire, double bow ties and an elastic band have been reportedly found deployed.^{5–11} In each of these cases, the authors have described the mechanism in which self constriction was achieved. It was also reported that each of these cases were initially perceived as homicidal strangulation. However, a reasonable co-relation with circumstantial evidences, a suicide note and a supporting psychological autopsy have been helpful in giving the ruling in favour of suicide.

In the present case the deceased had used a self-retaining plastic lock tie as ligature to strangle himself. The investigating agency initially suspected homicide. However, visit of autopsy surgeons to the scene of occurrence, and their inference from absence of signs of struggle, intact clothing and a suicide note of the deceased had lead to a conclusion of suicide. Since the organophosphorus compound was detected only in stomach contents and was absent in blood and other viscera, its possible role in causing death was

ruled out. The cause of death was opined as mechanical asphyxia as a result of compression of neck by ligature strangulation. The presence of organophosphorus compound in stomach contents has further upheld the fact that the deceased had a strong determination to commit suicide. A plausible reconstruction of the events revealed that the man being the sole bread winner of the family had financial crisis, which led him to commit suicide. It may also be inferred that he had consumed poison before strangling himself with plastic lock tie.

4. Conclusion

This case report shall add awareness on the possibility of using unusual types of ligature material for self-strangulation and misleading the investigating agency towards homicide. An accurate medicolegal evaluation of the circumstantial evidences and a methodical inspection of crime scene would always be a vital supplement to forensic autopsy.

Conflict of interest

None declared.

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